

**Title of Invention**

Motorcycle Stand

**Cross Reference to Related Applications**

This application claims the benefit of the filing date of provisional application 60/445,014 entitled Motorcycle Stand filed 2/05/03.

**Statement Regarding Federally Sponsored Research or Development**

Not Applicable

**Reference to a Sequence Listing, a Table, or a Computer Program Listing****Compact Disk Appendix**

Not Applicable

**Background of the Invention**

Work stands are a necessary tool to be used when performing maintenance on a motorcycle such as changing the tires or working on the brakes. Many maintenance tasks require removing the front wheel and therefore a stand to lift the front of a motorcycle must connect to the base of the forks or a position underneath the steering stem to give access to the front axle. There are many varieties of this type of stand on the market today. One limitation of these stands however, is accommodating motorcycles of different heights or raising the same bike to different heights. A stand that will work well on a smaller motorcycle will not work as well with a larger one. To eliminate the need for multiple stands, there is a need for a stand that adequately supports the motorcycle and is height adjustable.

**Brief Summary of the Invention**

The present invention is an improvement to a motorcycle front stand that will enable adjustments to be made in the working height of the stand.

A motorcycle stand is disclosed with a lower rotatable base portion that is adjustably connected to an upper frame that engages the lower end of the steering stem of a motorcycle. The base portion consists of a pair of arms to which are affixed a pair of fulcrum wheels and a handle for operation. The upper frame consists of support structure with adjustable brackets to connect to the

lower frame and an arm with an upwardly disposed pin to insert into the steering stem of a motorcycle.

Other objects and advantages of the present invention will be apparent from the following description, the accompanying drawings and the appended claims.

### **Brief Description of the Several Views of the Drawing**

FIG. 1 is a perspective view of the improved stand

FIG. 2 is a perspective view of the adjustable bracket in detail

FIG 3.is a perspective view of an alternative embodiment of the stand.

FIG 4 is an elevation view of the stand in cooperation with the motorcycle.

FIG 5 is an elevation view of the stand in just prior to operation.

FIG 6 is an elevation view of the stand with the motorcycle in the lifted position.

### **Detailed Description of the Invention**

Referring to Figures 1, 2, and 3, the embodiment of the stand of the present invention has a base support frame designated at 12 consisting of two upwardly disposed parallel members 14,15 and at the lower portion of each are connected two fulcrum wheels 16,17 by means of a bolt or pin 18,181. A pair of horizontal, forwardly disposed members 19,20 are connected to upwardly disposed parallel members 14,15. Members 19,20 are rigidly connected by means of a transverse member 21. Extending forward from transverse member 21 is a handle 22 that is used to leverage base support frame 12 during operation of the stand. At the top of each upwardly disposed members 14,15 is an integral horizontal member 23,24 with concentric through holes 25,251 for mating with adjustable brackets 30,31.

An upper support structure 40 consists of two generally vertical members 41,42 rigidly connected by a horizontal cross member 43. As shown in Figure 1, a member 44 for engagement with the motorcycle extends longitudinally from the horizontal cross member 43. Engagement member 44 has a pin 45 fixed by means of a bolt or pin 46 at the outward end for engagement with the motorcycle steering stem.

Attached at the lower end of vertical members 41,42 of the upper support structure 40 are adjustable brackets 30,31. As seen in figure 2, brackets 30,31

are flat, vertically oriented plates with horizontally disposed cylindrical protrusion 32 to provide rotational engagement with the hole 25 in the horizontal member 23. An elongated slot 34 is provided in brackets 30,31 to allow for vertical adjustment. Bolts 35,36 pass through an optional washer 37 and through brackets 30 and 31, then through optional spacer 38, and into threaded holes in the base of vertical members 41,42. Adjustments in the relative position of upper support structure 40 to base 12 are made by loosening bolts 35,36 and positioning as desired and then tightening bolts 35,36.

The bracket 30, 31 can take many forms and an alternative embodiment is shown in Figure 3. Brackets 30, 31 may have a series of holes 50 to allow adjustment of the height of the stand. They may be connected to upper support structure 40 by means of pins 60,61. The base of vertical members 41,42 may be designed so as to have a raised flat area 70 so that optional spacer 38 would be unnecessary.

Referring to Figures 4, 5 and 6, the stand is operated by rotating base support 12 forward so that the pin 45 may be inserted into the hole 46 in the lower end of the steering stem 47 of the motorcycle. After the pin is inserted, base 12 is rotated on fulcrum wheels 16,17 which causes a corresponding lift on upper support structure 40 thereby lifting the motorcycle until fulcrum wheels 16,17 pass underneath pivoting brackets 30,31 some distance  $x$  at which time front portion of base 12 contacts the ground.